

YOGA RESEARCH

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Mood Change & Perceptions of Vitality A Comparison of the Effects of Relaxation, Visualization and Yoga

Summary

The effects of three different procedures, relaxation, visualization and yogic breathing and stretching on perceptions of physical and mental energy and on positive and negative mood states have been assessed in a group of normal volunteers ($N=71$, age range 21-76).

Pranayama [yoga practices] produced a significantly greater increase in perceptions of mental and physical energy and feelings of alertness and enthusiasm than the other two procedures ($P<0.5$). Relaxation made subjects significantly more sleepy and sluggish immediately after the session than pranayama [yoga practices] ($P<0.05$). Visualization made them more sluggish but less content than pranayama [yoga practices] ($P<0.05$) and more upset than relaxation after the second session ($P<0.05$).

Thus, a 30 minute programme of yogic stretch and breathing exercises which is simple to learn and which can be practised even by the elderly had a markedly 'invigorating' effect on perceptions of both mental and physical energy and increased high positive mood.

Introduction

The capacity of individuals to function effectively and to achieve their desired aims depends not only on their state of physical fitness but also on their perception of whether they possess the requisite levels of mental and physical energy to perform the task at hand.

Earlier studies have shown that subjective perceptions of vigour can be easily and reliably measured using visual analogue scales. It is of particular interest to know whether the perception of vitality can be reliably increased, and if so, whether this will result in an actual increase in physical or mental activity.

It was therefore decided to compare the influence of three different procedures on perceptions of vitality.

Visualization or guided imagery is a procedure designed to bring about psychological

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(and also physiological) change by way of achieving a mental image of the area in which change is sought, and then bringing that change about in imagination.

Relaxation is a procedure that is very widely practised to reduce subjective arousal.

Pranayama (Sanskrit *prana*=vital energy; *ayama*=to expand) is [used here to refer to] a form of yoga which places particular emphasis on techniques of breathing. It also involves other physical movements, particularly stretching.

Intervention Procedures

There were three sub-groups of subjects. Each sub-group underwent two sessions each of relaxation, visualization and pranayama [yoga practices]. Each of the three sub-groups received these procedures in a different sequence, to control for order effects. All interventions were timed to last for 25-30 minutes. All procedures were performed with the subjects either sitting or standing, because of limitations of space.

The relaxation procedure involved the progressive relaxation of major muscle groups without previous or compensating contractions, together with a non-specific imagery exercise in which subjects were invited in their imagination to visit a safe and comfortable place of their own choosing.

Visualization was directed towards the subjects obtaining an image or metaphor of their current energetic state. After a brief period of 'settling down' they were invited to evoke such an image and to discover and explore its meaning and then to decide what changes they would need to bring about in imagination to increase their energy levels. Finally, they were asked, again in imagination, to apply these changes and to assess the outcome.

The pranayama exercise consisted of a series of 12 yoga exercises presented in a simplified form so as to be achievable by a class of total beginners, some in late middle-age. After a brief initial period of relaxation and observation of the breath, the session consisted of a series of physical stretching and contraction exercises together with deep breathing and forced exhalation, sometimes accompanied by humming or other vocalization.

Experimental procedure

On arrival at each session, subjects were presented with a series of 10 visual analogue scales indented at five unit intervals for them to record their perceived levels *at that moment* of physical and mental energy. Positive affect and negative affect were assessed by similarly measuring subject's level of alertness, enthusiasm, sluggishness, sleepiness and the degree to which they felt upset, nervous, content and calm.

Subjects then underwent the appropriate intervention procedure. On its completion, they filled out a second set of visual analogue scales to assess their feelings immediately after the intervention. They

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is to ask the right question.**

Sir Henry Tizard

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also completed a short questionnaire to record whether they found the pranayama [yoga practices] and relaxation easy and pleasant to do, and whether they achieved an image and were able to transform it during visualization.

Results

Over 90% of subjects said that they had found the pranayama [yoga practices] both easy and pleasant to do on both occasions. For relaxation, over 80% found it easy and 95% found it pleasant. With visualization however, 20% of subjects failed to obtain an image on the first occasion and by the second session this figure had risen to 29%. Kruskal-Wallis analysis of the three sub-groups showed that significantly fewer images were obtained in sub-group A ($P=0.01$), the group which contained the highest proportion of men.

Correlation of the energy and mood variables, both before and after intervention, showed that levels of physical energy were highly and significantly correlated with mental energy. Both were correlated with high positive affect, and with high negative affect (inversely).

Three-way analysis of variance with repeated measures by type of intervention showed significant differences for physical and mental energy, alert and enthusiastic, upset, sluggish, sleepy and content. Newman-Keuls multiple comparisons revealed that the effects of pranayama [yoga practices] were significantly greater than those of either relaxation or visualization (all $P<0.05$) during both intervention sessions for physical energy, mental energy and feeling alert.

Both pranayama [yoga practices] and relaxation made subjects significantly more enthusiastic than did visualization at both time points, and pranayama [yoga practices] had a significantly greater effect than relaxation on enthusiasm in the first intervention session. Relaxation made subjects significantly more sleepy than pranayama [yoga practices] on both occasions.

Visualization made subjects more sleepy than pranayama [yoga practices] in session 2. Both relaxation and visualization made them feel significantly more sluggish than pranayama [yoga practices] in session 1. Visualization made them significantly more upset than relaxation at time 2. Both pranayama [yoga practices] and relaxation made subjects more content than visualization at both time points.

Discussion

As previous investigations have shown, perceptions of mental and physical energy are strongly correlated with each other and show similar patterns of diurnal change. Nonetheless, they can be distinguished by volunteers and appear to represent separate areas of human subjective experience. The present investigation confirmed these findings. Correlations between mental and physical energy were all highly significant ($P<0.01$)

Exploring the relationship between energy and mood variables, it becomes clear that the subjective sense which we have called 'vitality' is characterized by high levels of positive and low levels of negative affect.

What can be concluded more generally about the relationship between perceptions of energy and mood state? We have argued

elsewhere that perceptions of physical and mental energy represent the

integration at an affective level of a large amount of physiological information about the person's capacity to function, sensory data of which the individual might not be directly conscious.

In summary, it is clear that a 30 min. session of yogic stretching and breathing exercises produces a marked augmentation in perceptions of physical and mental energy. Such exercises also increase feelings of alertness and enthusiasm, and make subjects feel distinctly less sluggish and sleepy than before the session began.

excerpted with permission of the author of the study, C.Wood, M. Sc., D. Phil, Department of Experimental Psychology, University of Oxford.

Please note:

Throughout the text, information within the brackets [] has been added by the editors for clarification.

ANNOUNCEMENT

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